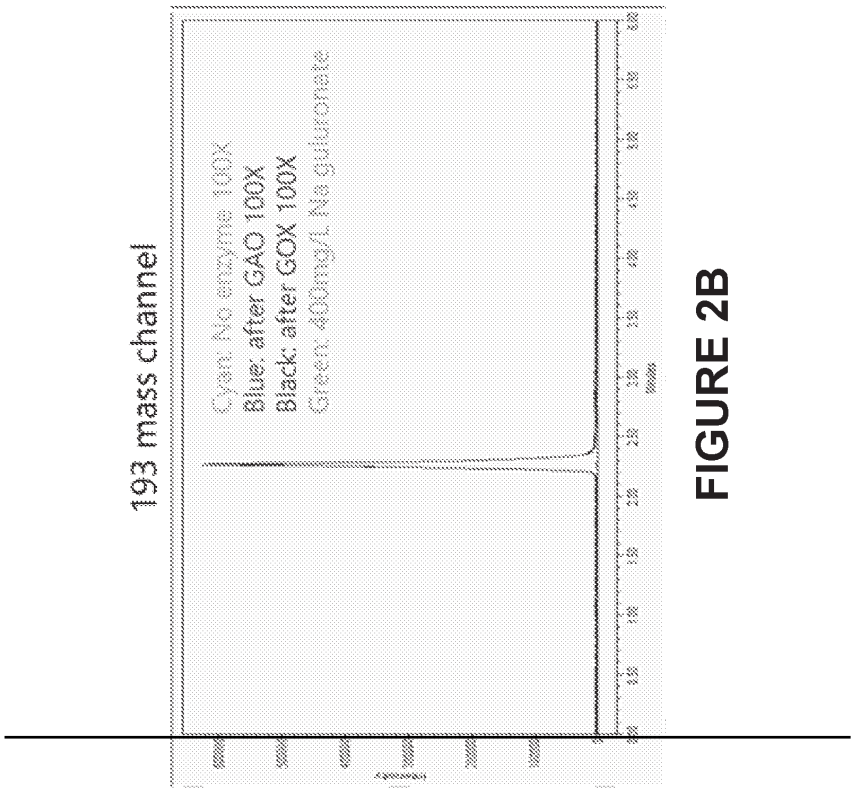


FIGURE 2B

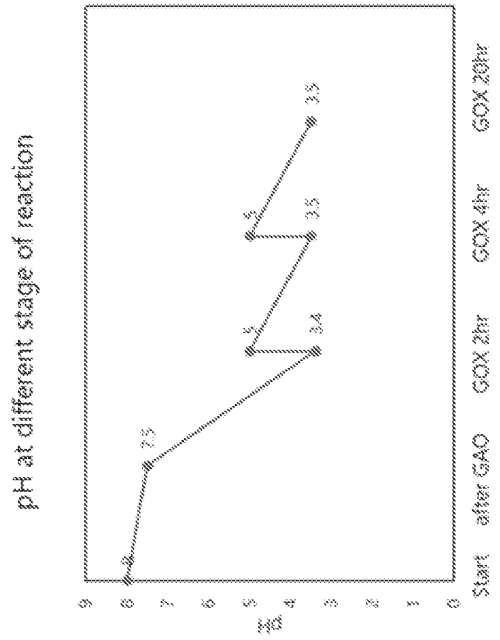


FIGURE 2A

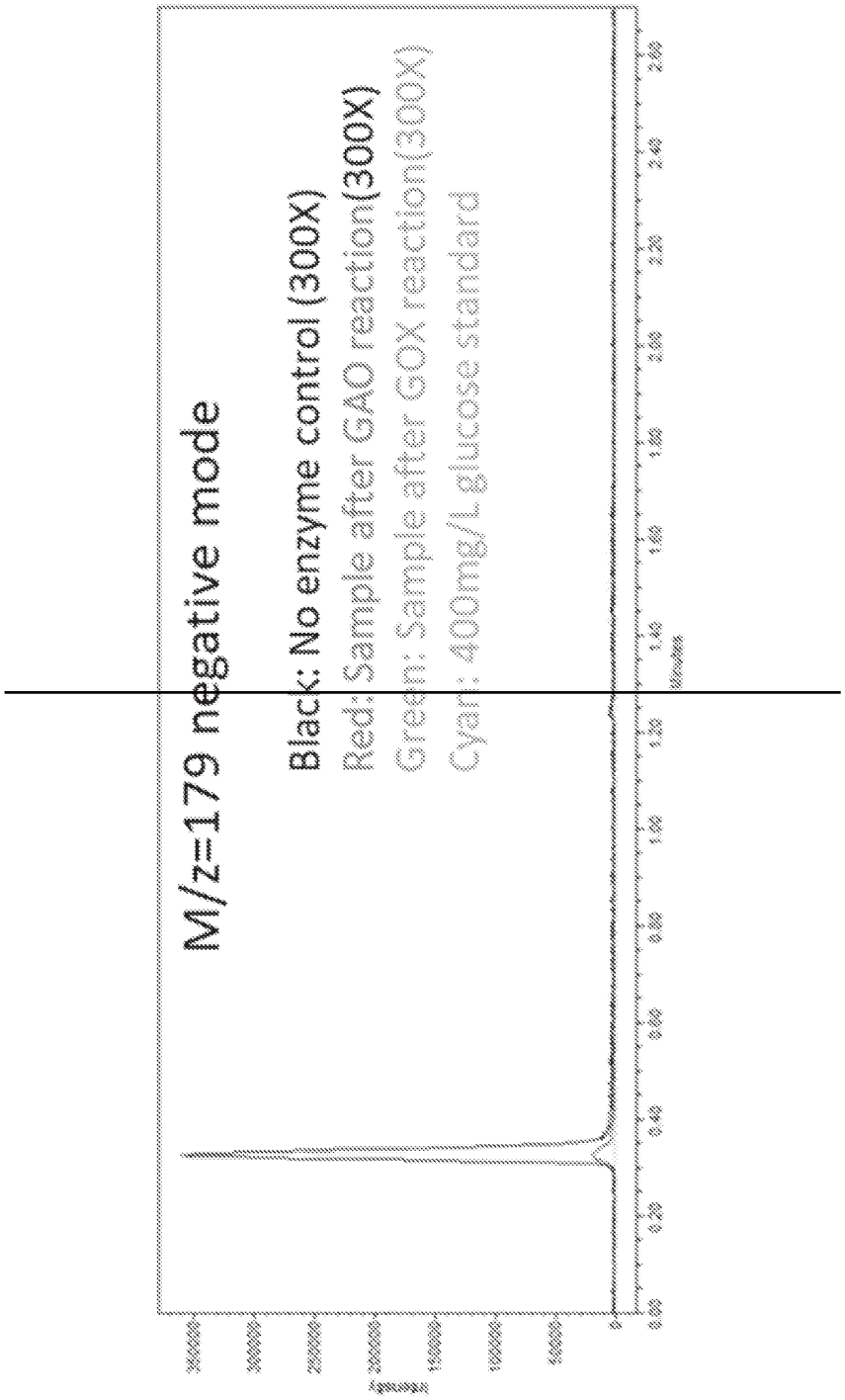

M/z=179 negative mode
Black: No enzyme control (300X)
Red: Sample after GAO reaction(300X)
Green: Sample after GOX reaction(300X)
Cyan: 400mg/L glucose standard
Minutes

FIGURE 9C

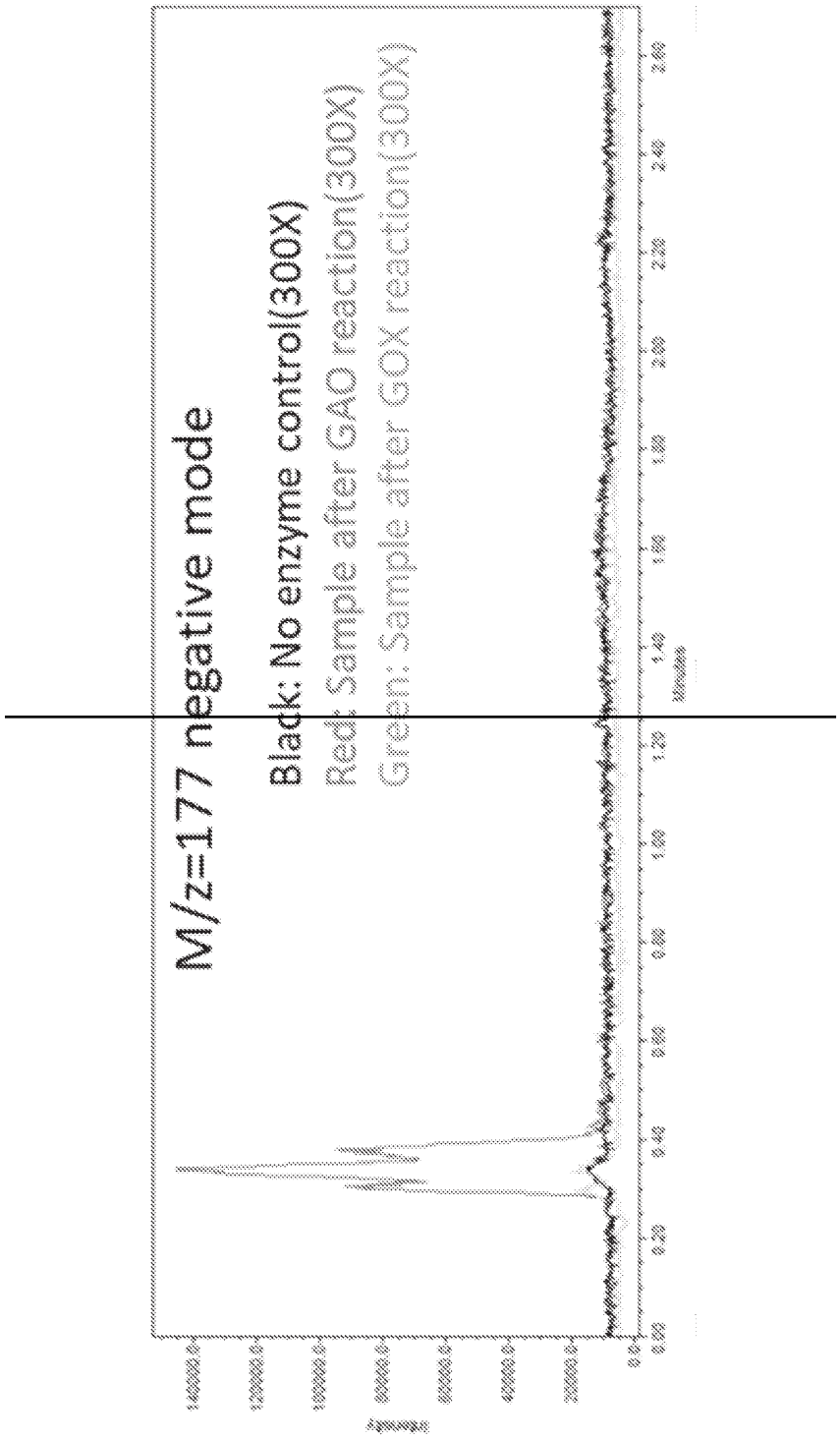

M/z=177 negative mode
Black: No enzyme control(300X)
Red: Sample after GAO reaction(300X)
Green: Sample after GOX reaction(300X)
Minutes

FIGURE 9D

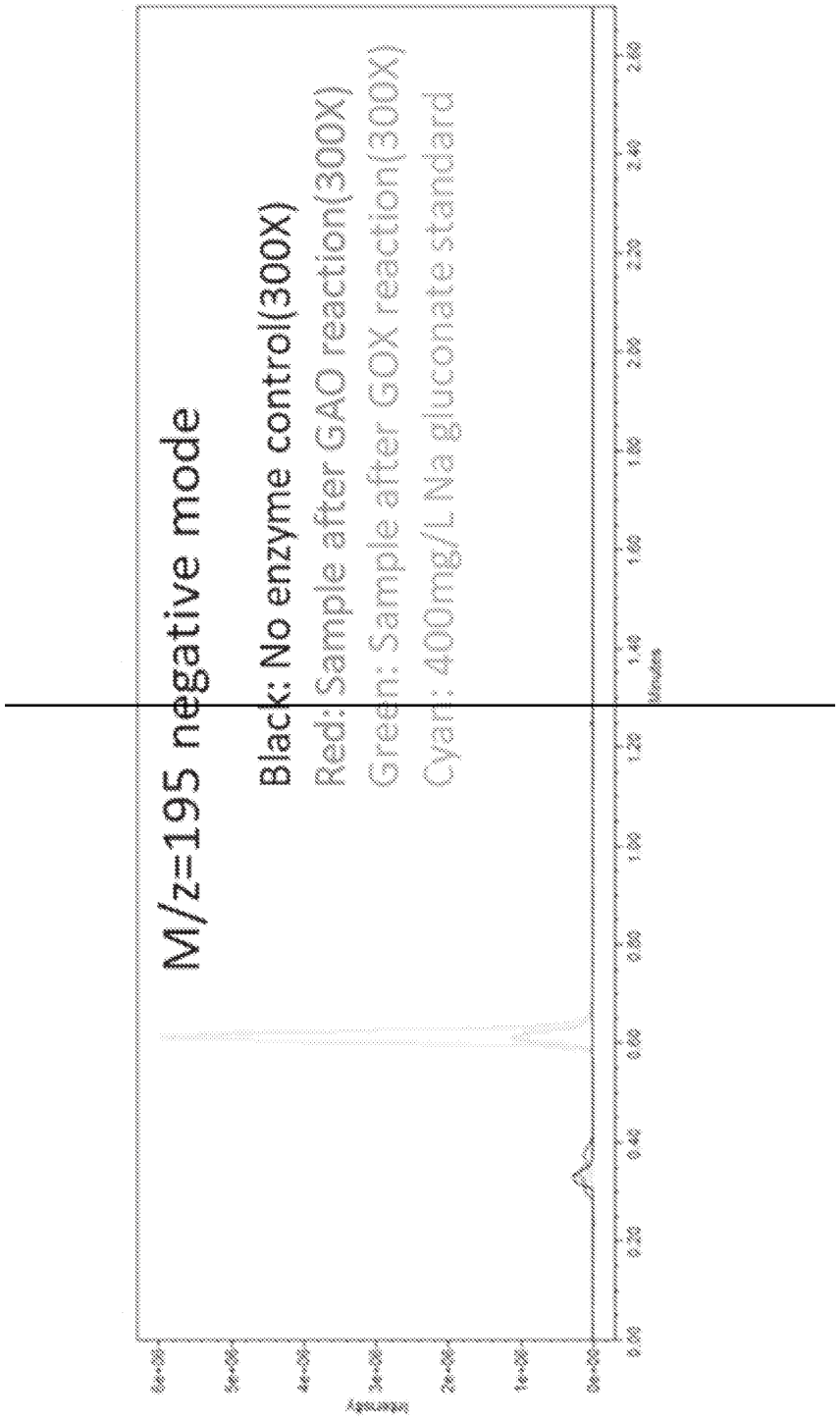

M/z=195 negative mode
Black: No enzyme control(300X)
Red: Sample after GAO reaction(300X)
Green: Sample after GOX reaction(300X)
Cyan: 400mg/L Na gluconate standard
Minutes

FIGURE 9E

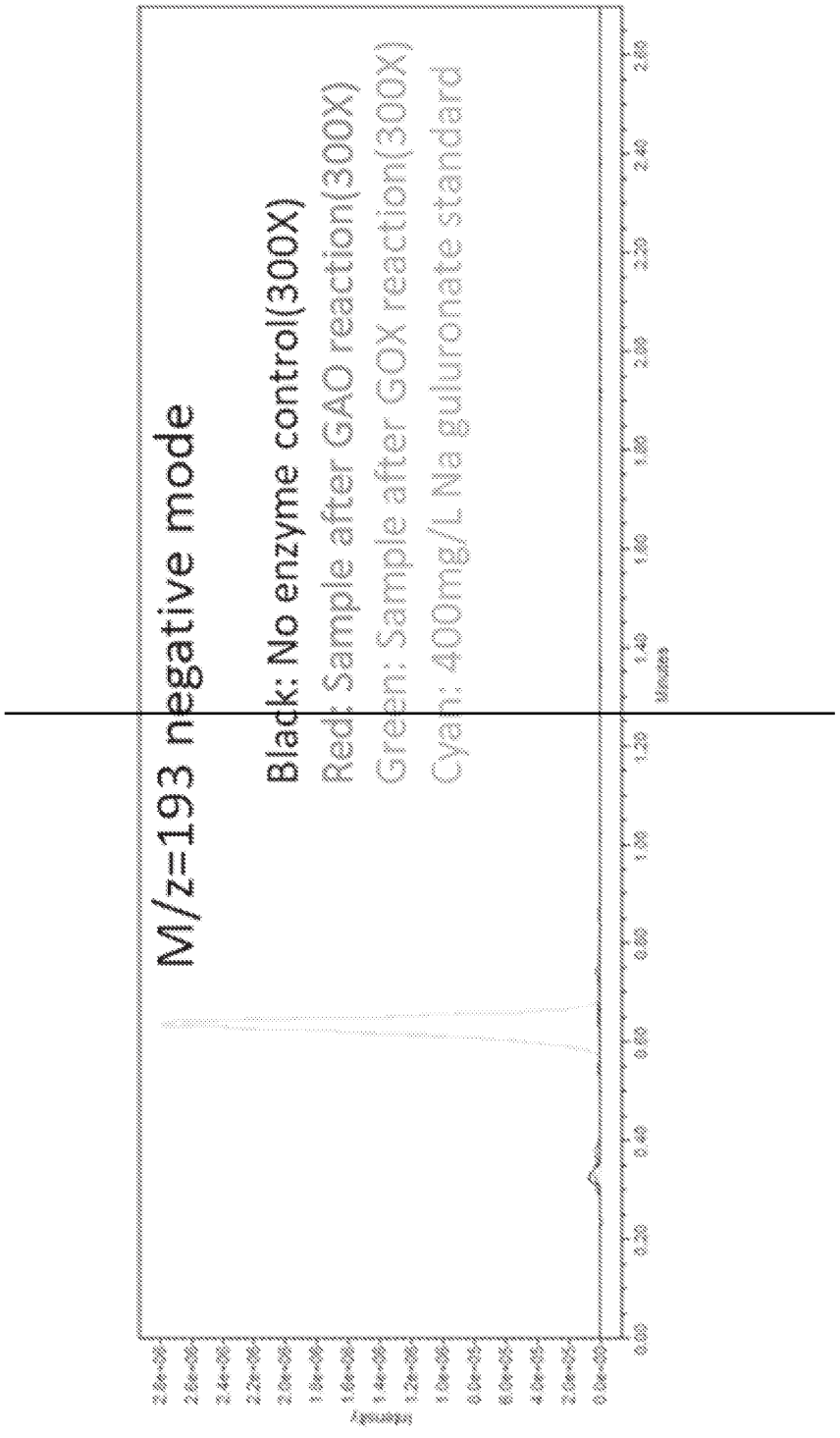

M/z=193 negative mode
Black: No enzyme control(300X)
Red: Sample after GAO reaction(300X)
Green: Sample after GOX reaction(300X)
Cyan: 400mg/L Na gulunonate standard
Minutes

FIGURE 9F

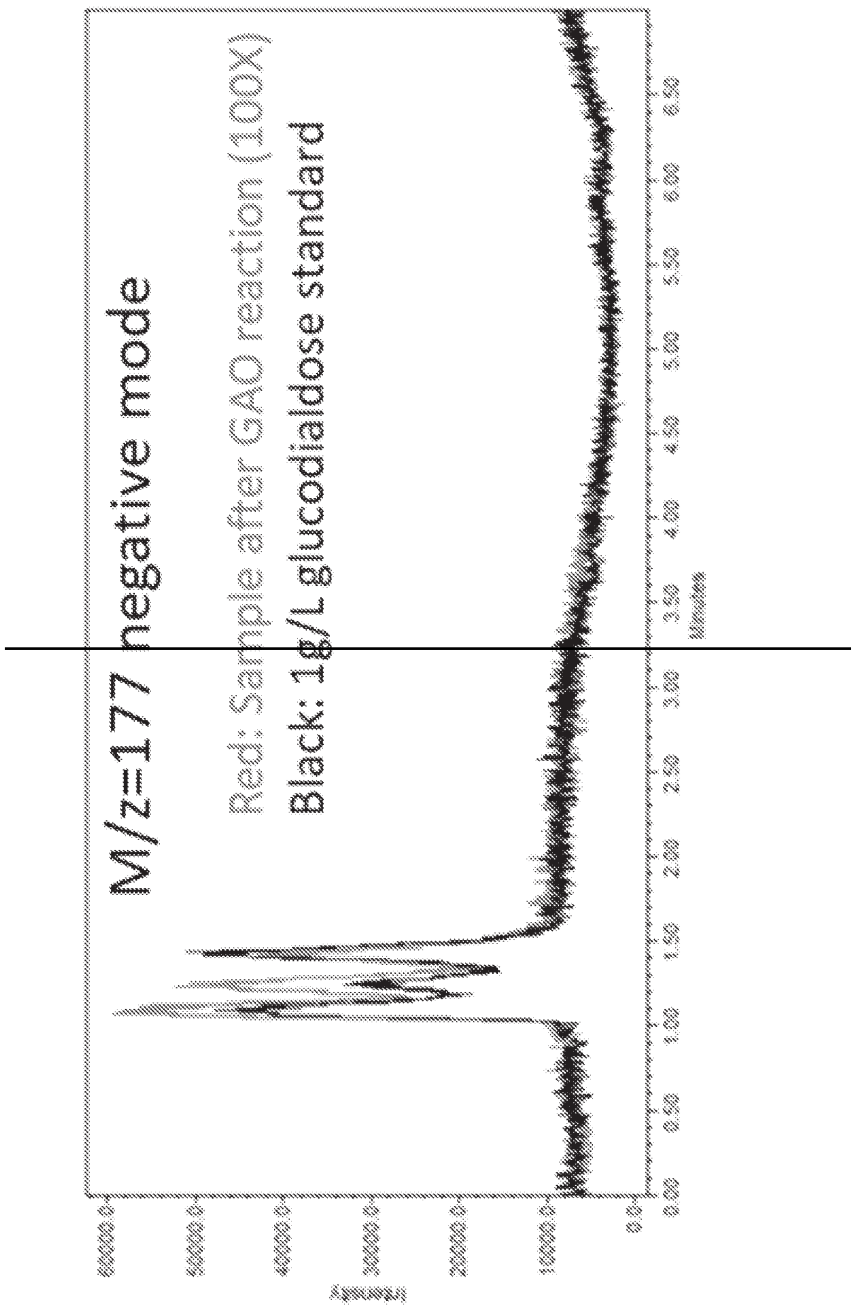

M/z=177 negative mode
Red: Sample after GAO reaction (100X)
Black: 1g/L glucodialdose standard
Minutes

FIGURE 9G

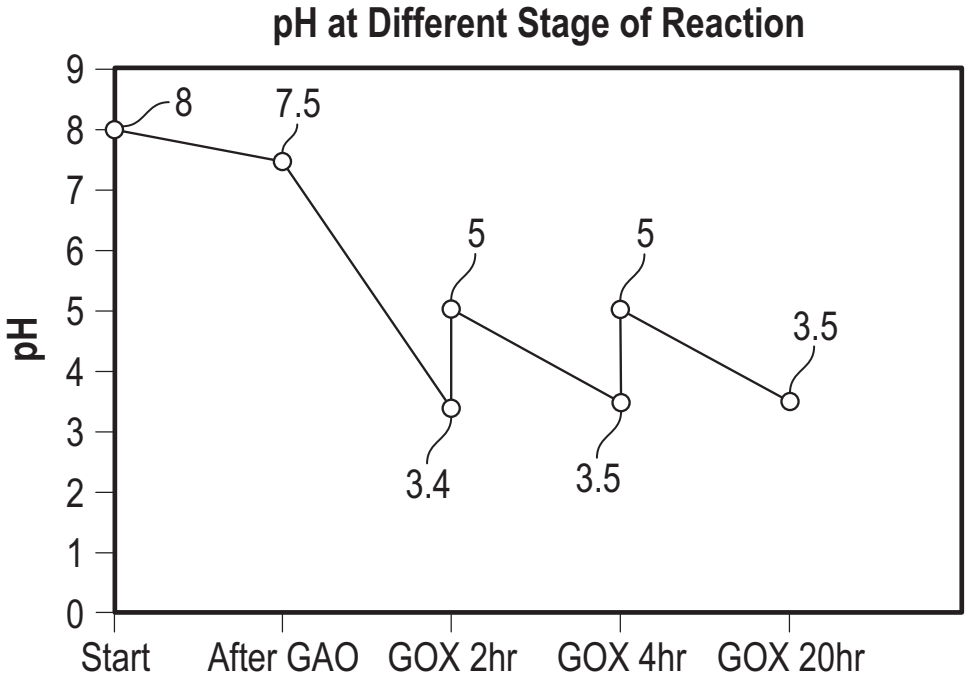

pH at Different Stage of Reaction
pH
9
8
7
6
5
4
3
2
1
0
8
7.5
5
5
3.5
3.4
3.5
Start
After GAO
GOX 2hr
GOX 4hr
GOX 20hr

FIG. 2A

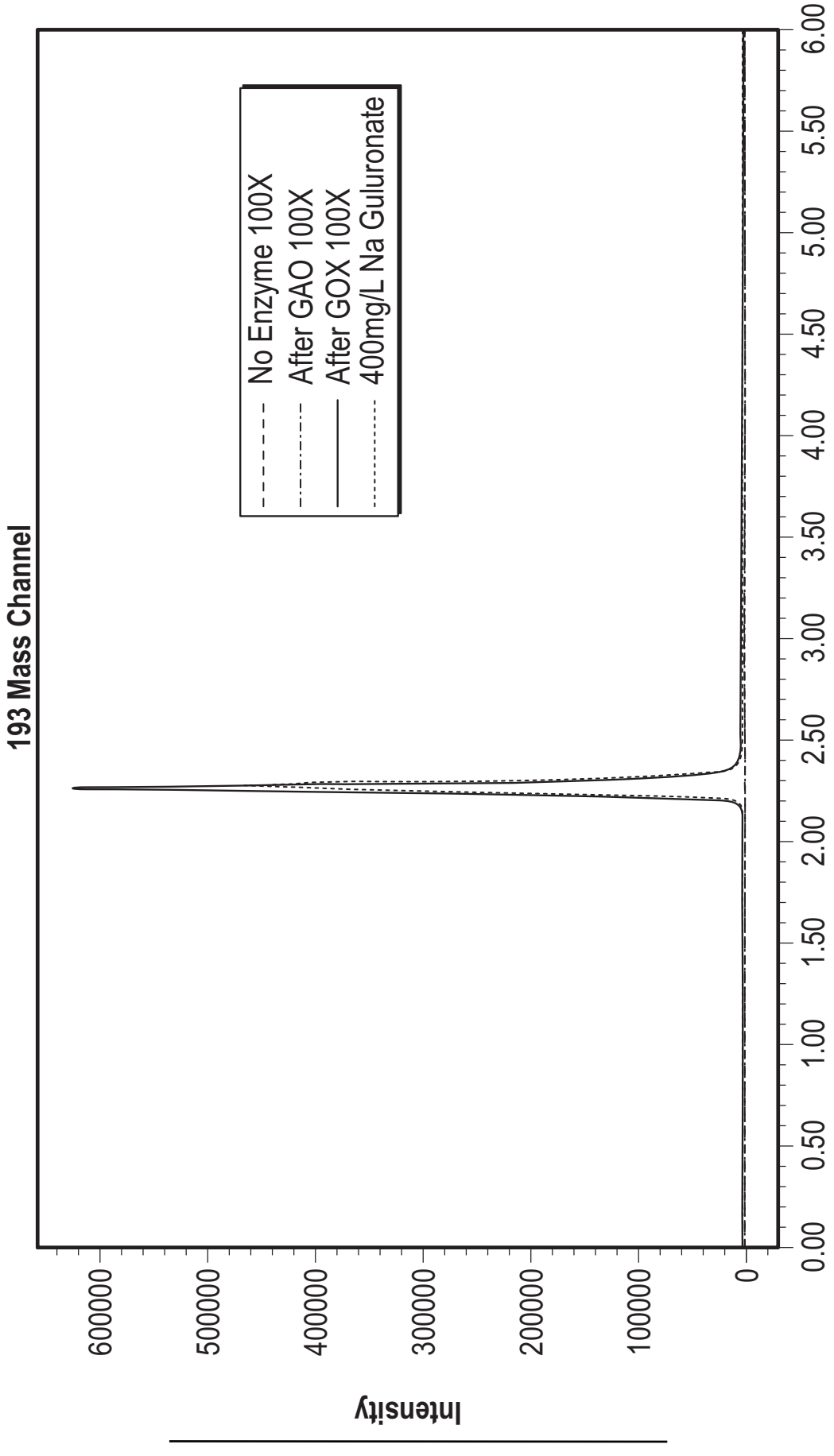

193 Mass Channel
No Enzyme 100X
After GAO 100X
After GOX 100X
400mg/L Na Guluronate
Intensity
600000
500000
400000
300000
200000
100000
0
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
5.50
6.00
Minutes

FIG. 2B

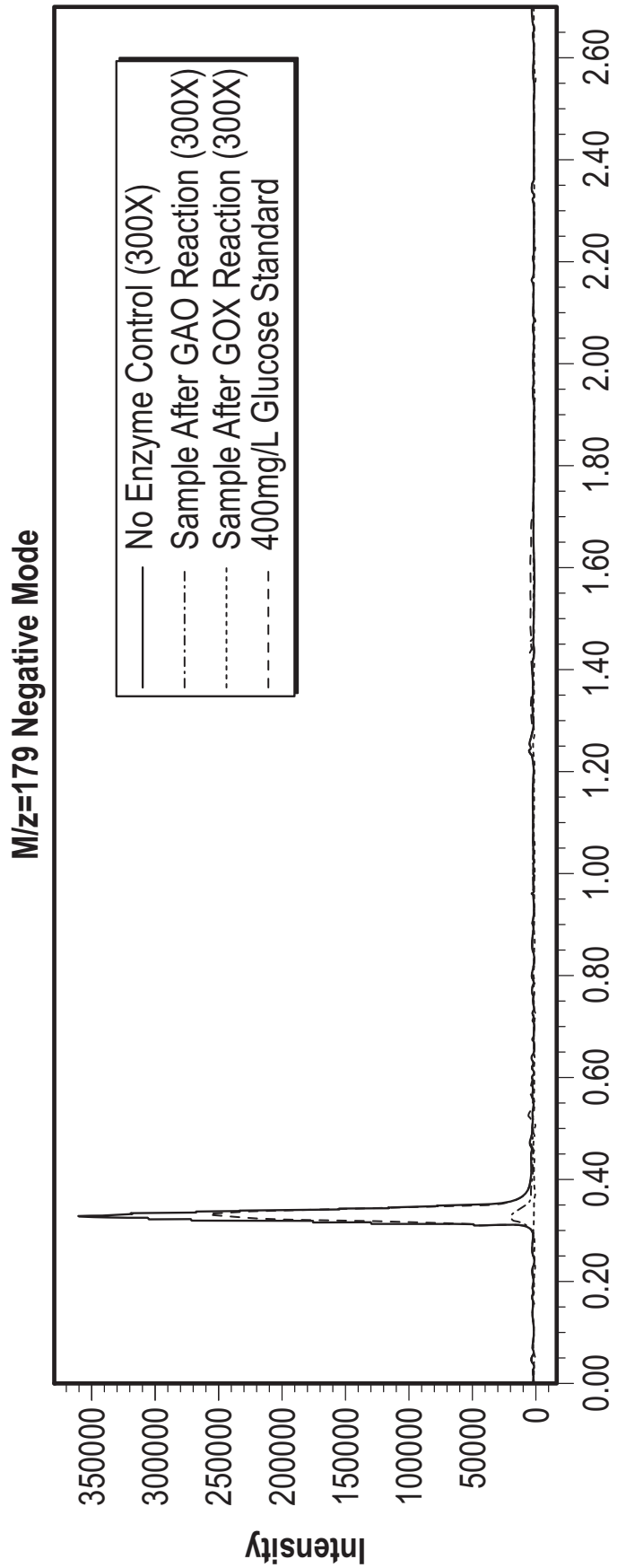

M/z=179 Negative Mode
No Enzyme Control (300X)
Sample After GAO Reaction (300X)
Sample After GOX Reaction (300X)
400mg/L Glucose Standard
Intensity
350000
300000
250000
200000
150000
100000
50000
0
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
2.60
Minutes

FIG. 9C

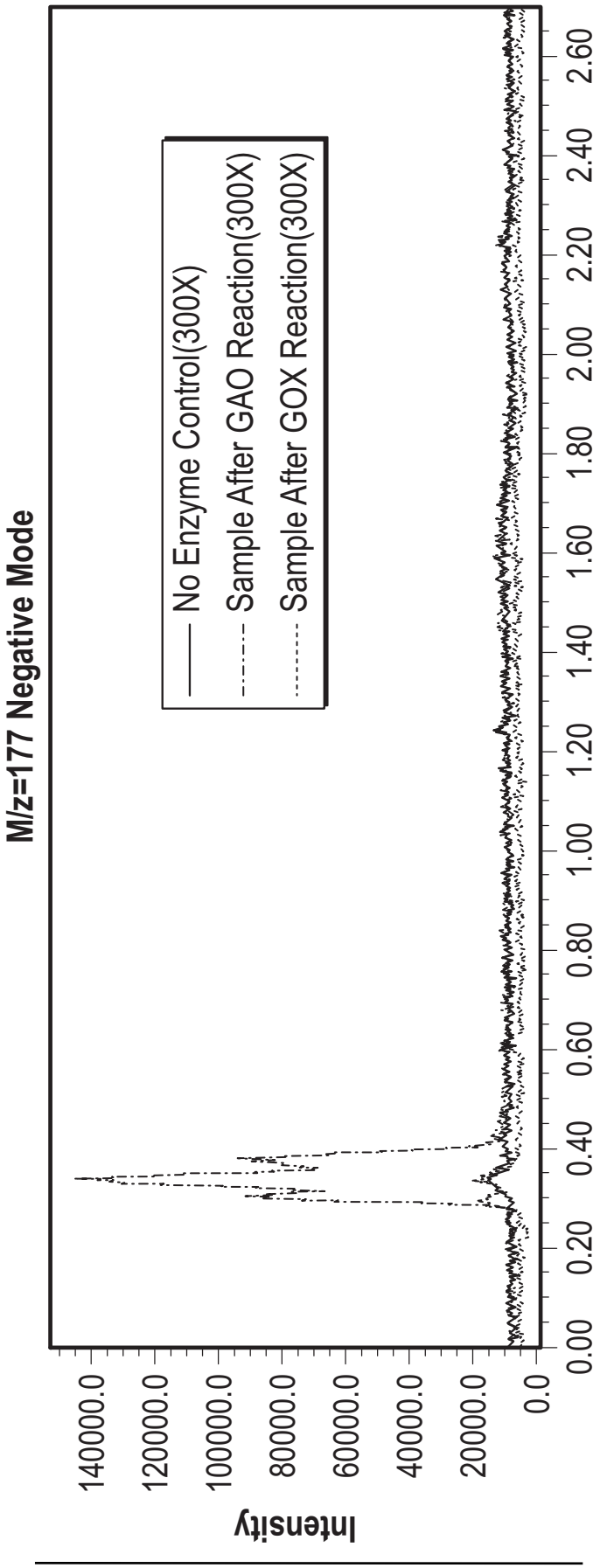

M/z=177 Negative Mode
No Enzyme Control(300X)
Sample After GAO Reaction(300X)
Sample After GOX Reaction(300X)
Intensity
140000.0
120000.0
100000.0
80000.0
60000.0
40000.0
20000.0
0.0
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
2.60
Minutes

FIG. 9D

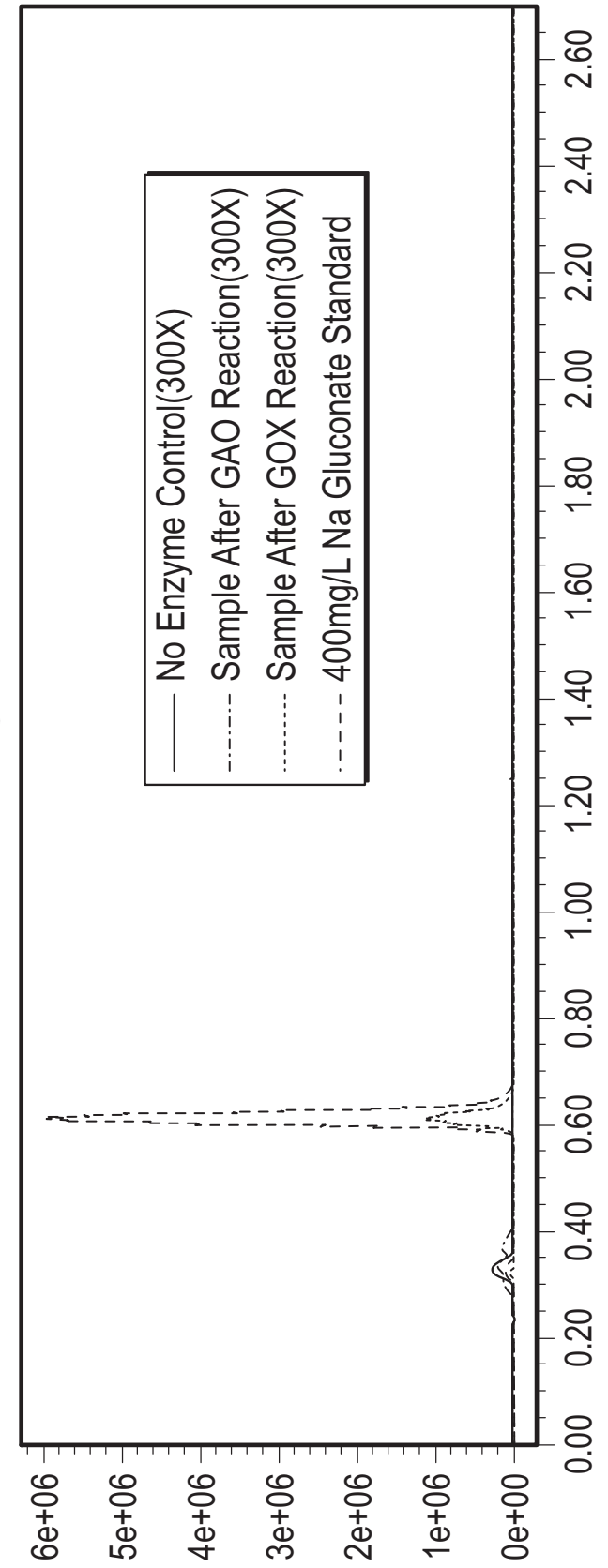

M/z=195 Negative Mode
No Enzyme Control(300X)
Sample After GAO Reaction(300X)
Sample After GOX Reaction(300X)
400mg/L Na Gluconate Standard
Intensity
0e+00
1e+06
2e+06
3e+06
4e+06
5e+06
6e+06
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
2.60
Minutes

FIG. 9E

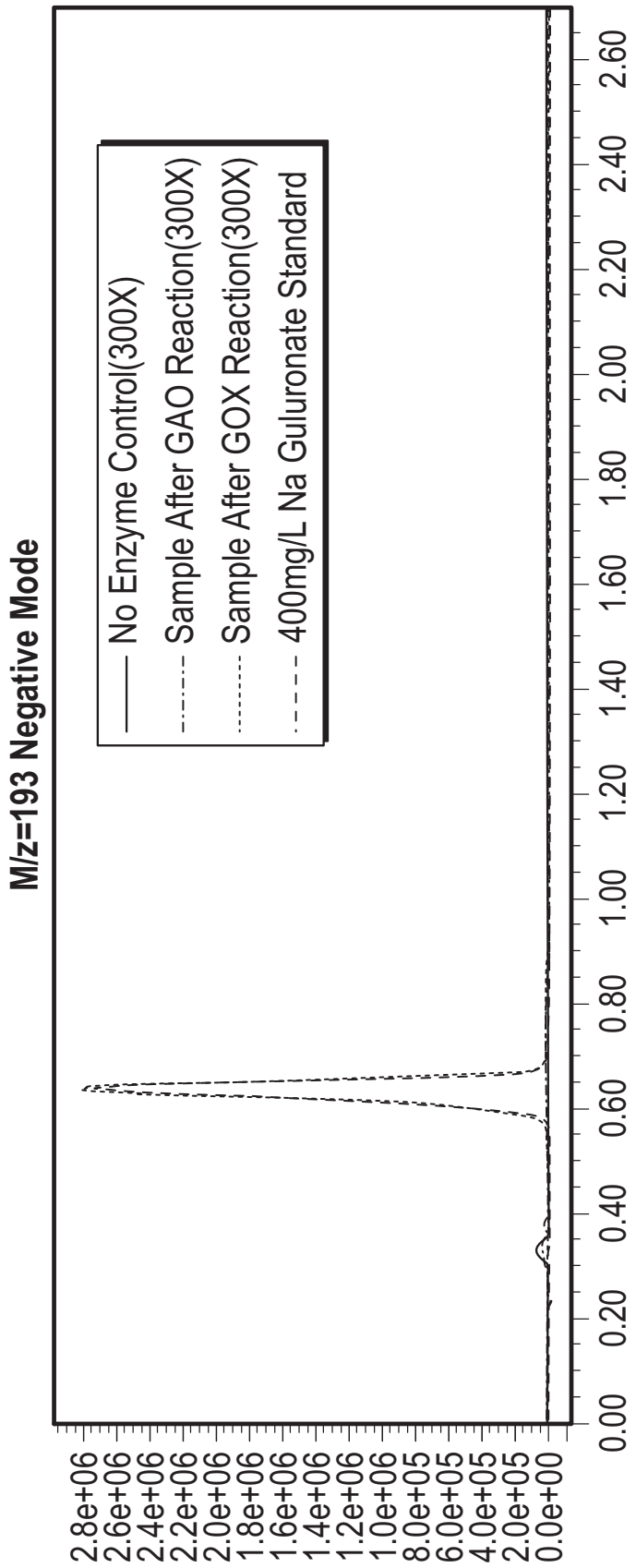

M/z=193 Negative Mode
No Enzyme Control(300X)
Sample After GAO Reaction(300X)
Sample After GOX Reaction(300X)
400mg/L Na Guluronate Standard
Intensity
2.8e+06
2.6e+06
2.4e+06
2.2e+06
2.0e+06
1.8e+06
1.6e+06
1.4e+06
1.2e+06
1.0e+06
8.0e+05
6.0e+05
4.0e+05
2.0e+05
0.0e+00
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
2.40
2.60
Minutes

FIG. 9F

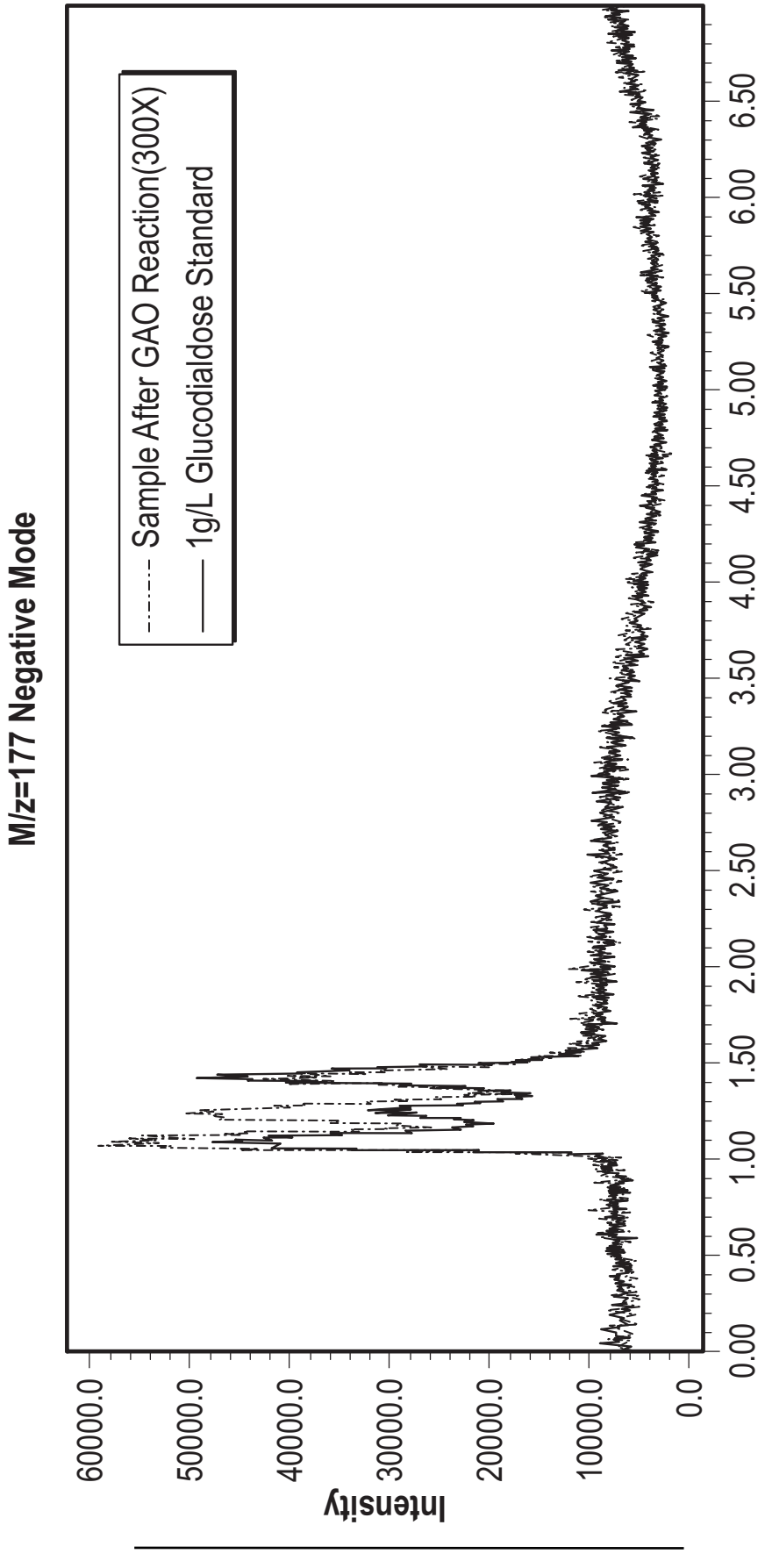

M/z=177 Negative Mode
Sample After GAO Reaction(300X)
1g/L Glucodialdose Standard
Intensity
60000.0
50000.0
40000.0
30000.0
20000.0
10000.0
0.0
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00
5.50
6.00
6.50
Minutes

FIG. 9G